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NOTES AND LITERATURE.

BIOGRAPHY.

Lamarck's Life and Work.¹ — It would be difficult to single out from the naturalists of the past one more appropriate for biographical treatment at the present time than Lamarck. The renewed interest taken in his work in the last two decades, and the appearance of such books as Darwin's *Life and Letters* and the recent biography of Huxley suggest some extended treatment of the greatest of the precursors of the Darwinian movement. Unfortunately, the material for such a study is meager in the extreme, and Dr. Packard has been obliged to search assiduously for the relatively few facts he can record of the life of the great French naturalist. The biographical portion of the work is contained in the first sixty-five pages. Then follows a general estimate of Lamarck by contemporary and later biologists. Lamarck's wide range of activities is next reviewed in chapters dealing with his work in meteorology and physical science, in geology, in invertebrate paleontology, in general physiology, in botany, and in zoölogy. This is followed by a historical treatment of the theory of evolution leading up to Lamarck's contribution to it. The last chapter is on Neolamarckism, and the volume is concluded by a bibliography and a short index. There are ten full-page illustrations, four of which are portraits of Lamarck.

The biographical chapters, which really form the introduction to the body of the work, give one the impression of uncritical methods. Dr. Packard was unable to find in Paris any exact statement of Lamarck's birthplace, and he undertook the very worthy task of seeking it out for himself. His belief, however, that the house that he was shown at Bazentin was the place in question rests upon the unsupported statement of the village schoolmaster, who, we are told, left his duties in the schoolroom to point out the ancient structure. Possibly Dr. Packard may be correct, but the whole account has much more the air of French politeness than of scientific acumen. Still more unsettling are the statements concerning

¹ Packard, A. S. *Lamarck, the Founder of Evolution, his Life and Work*. New York, Longmans, Green & Co., 1901. xii + 451 pp., 10 pls.

Lamarck's death. This occurred, according to Dr. Packard, on Dec. 28, 1829 (p. 56), the obsequies were celebrated on the Sunday preceding December 23, the burial took place December 30 (p. 57), and the first assembly of professors after his death was on December 22 (p. 62). From this confusion of dates one may seek refuge in a biographical dictionary to find that Lamarck died December 18 and was buried probably December 20. It is really unfortunate that in the one extended account of Lamarck's life in English the date of his death should not be accurately recorded.

Although the biographical introduction is somewhat disappointing, the body of the work more than makes good this defect. Dr. Packard is to be congratulated on having hit upon the happy idea of allowing Lamarck to expound his own views, and a large part of the 300 pages that follow the biography is made up of translations of well-selected passages from the works of Lamarck. Nowhere else in English is one likely to find so true an exposition of the *Philosophie zoologique* as in the chapter devoted to this subject, and the reading of this portion of the work is to be recommended to every student of zoölogy that is not already familiar with Lamarck's original publications.

The concluding chapter deals with Neolamarckism, a movement with which Dr. Packard has had much to do and about which he can consequently speak with authority. The impression made by this chapter is, however, one of extreme vagueness. What Neolamarckism is, is nowhere made very clear. Darwin's views and Lamarck's are contrasted, and much stress is laid on the importance of environment as a factor in the production of variations; but the idea is not even suggested that all such material may be only grist for the Darwinian mill. Moreover, a strange inconsistency runs through much of this chapter, for Dr. Packard seems to think that by pointing out the weaknesses of Darwinism, he is strengthening Lamarckism. This leads him to give numerous quotations from the works of eminent biologists who were keen enough to expose some of the weak points in natural selection, but who did not perceive that by so doing they were ranking themselves Neolamarckians. The last quotations in criticism of natural selection are taken from Huxley; had a few been drawn from Darwin the proof would have been complete. The real question, however, is not whether Lamarckism is true and Darwinism untrue, — for these theories are not necessarily incompatible, — but what are the factors of evolution; and on this point Dr. Packard has not much to say, though in

the body of the work Lamarck tells us many things worthy of careful perusal and thought. While this last chapter, like the biographical introduction, leaves much to be desired, Dr. Packard's volume is so replete with good translations of well-chosen passages from Lamarck that one cannot hesitate in pronouncing it the most complete and truthful statement of Lamarck's views that has thus far appeared in English.

ZOÖLOGY.

Benham on Flatworms.—The present volume,¹ which is Part IV of Lankester's *Treatise*, is the third of this useful series to make its appearance, and covers, in Chapters XIV to XXI inclusive, the Turbellaria, Temnocephaloidea, Trematoda, Cestoidea, Appendices to the Platyhelminia, and Nemertini. Each chapter opens with a synopsis of the classification adopted for the group, and this is followed by an admirable historical summary, which, though brief, is notably clear, complete, and well balanced. The next section deals with the general characters of the group under consideration, and contains an analysis and discussion of each subdivision in order, closing with a list of the chief works on the group. The "ideal" platyhelminth, exploited in the opening chapter, is rather too generally used to meet the approval of present-day zoölogists, even though it affords an easy standard of comparison for the beginner. It is a great pleasure, however, to see some important theoretical explanations presented in a general text, and that in a clear and attractive manner which serves to make the mass of detail comprehensible. But it may be seriously questioned whether anything is gained by raising to the rank of phylum every group which after intensive study appears to be sharply set off from its nearest of kin.

For Turbellaria the author has used the classification of Lang and von Graff, and has made a happy selection of figures to illustrate the points under consideration. The short chapter on Temnocephaloidea follows Haswell's work very closely and gives the best presentation of this little-known group accessible in any text-book.

Among the Trematoda, Monticelli's classification, as modified by

¹ *Treatise on Zoölogy*. Edited by E. Ray Lankester. Part IV, The Platyhelminia, Mesozoa, and Nemertini. By W. Blaxland Benham, D.Sc., M.A. London, Adams and Black; New York, The Macmillan Company. 204 pp., 114 text-figs.